

**REMARKS**

Claims 1-14 are pending in this application, with claims 1-12 having been withdrawn from consideration as directed to a non-elected invention. By this Amendment, claims 13 and 14 are being amended, in order to place this application in better condition for allowance. It is respectfully submitted that no new matter is contained in this Amendment.

**CLAIM OBJECTIONS**

Claim 13 was objected to for various informalities. Without conceding the propriety of these objections, Applicants submit that they have been overcome by the claim amendments set forth herein.

**REJECTIONS UNDER 35 U.S.C. §§ 101 and 112**

Claims 13-14 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 13-14 were also rejected under 35 U.S.C. § 101, on the grounds that the claims are directed to a process without setting forth any steps involved in the process. Without conceding the propriety of these rejections, Applicants submit that they have been overcome by the claim amendments set forth herein.

**REJECTIONS UNDER 35 U.S.C. §§ 102 and 103**

Claims 13-14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Flynn et al. (U.S. Patent No. 5,663,127, hereinafter "Flynn"). Claim 13 was rejected under 35 U.S.C. § 103(a) as being obvious over Scarati et al. (U.S. Patent No. 4,746,575, hereinafter "Scarati"). Claim 14 was rejected under 35 U.S.C. § 103(a) as being obvious

over Scarati in view of Flynn. To the extent they are still applicable in view of the amendments set forth herein, Applicants respectfully traverse these rejections.

Applicants' claimed invention relates to the use of specific linear perfluoropolyethers of formula (I) as lubricants, or to provide water and oil-repellance to surfaces. These compounds show improved properties, such as higher thermooxidative stability in the presence of metals, when used in the processes of the present invention. (See page 2, lines 1-3, of Applicants' specification).

This is an advantage because the present perfluoropolyethers (PFPEs) are more stable in the presence of metals than commercial PFPEs having different structures, when used at the same operating temperatures.

These improved properties are due to the specific structure wherein  $C_3$  and  $C_4$  linear perfluorooxy alkylene units are present, and the ratio between the  $C_2$  and  $C_1$  perfluorooxy alkylene units  $m/n$  is at least 2, as set forth in claims 13 and 14. (See also page 5, last paragraph, of Applicants' specification).

Although Flynn generally discloses perfluoropolyethers, it does not disclose linear perfluoropolyethers having ratios between the various  $C_1$ - $C_4$  perfluorooxy alkylene units as presently claimed, in particular the ratio between  $C_2$  and  $C_1$  perfluorooxy alkylene units.

Indeed, Flynn provides a range for each index  $m$ ,  $n$ , and  $p$ , but does not disclose any ratio between the different repeating units or between the various indices  $m$ ,  $n$ , and  $p$ . Furthermore, Flynn is not directed to linear PFPEs since the repeating units of Flynn are both linear and branched. It is also respectfully noted that the PFPEs of Flynn can contain perfluoroalkyl chains such as  $(C_yF_{2y})$  and  $(C_zF_{2z})$ , which are absent from the

present PFPEs.

Applicants have demonstrated that PFPEs having a ratio of  $C_2$  and  $C_1$  perfluorooxy alkylene units outside the presently claimed range, *i.e.*, less than 2, and not containing  $C_3$  and  $C_4$  perfluorooxy alkylene units (see comparative Example 5 – Fomblin Z 25), have a lower thermooxidative stability in the presence of metal. PFPEs having a different structure from that of the claimed invention lose more weight than the PFPEs of the claimed invention at the same operating temperature.

Flynn does not disclose or suggest the presently-claimed processes for lubricating, or providing water and oil repellance, using the claimed PFPEs. Flynn also does not disclose or suggest the use of said PFPEs in the presence of metals. Instead, Flynn discloses Fomblin Z as an example of the PFPEs included within its formula. As stated in Applicants' specification, Fomblin Z is characterized by a ratio of  $C_2$  and  $C_1$  perfluorooxy alkylene units of less than 2, and by an absence of  $C_3$  and  $C_4$  perfluorooxy alkylene units.

Scarati discloses the use of a list of PFPEs as lubricants for magnetic tape. The listed PFPEs from (A1) to (A8) are not linear PFPEs wherein  $C_3$  and  $C_4$  perfluorooxy alkylene units are present, and the ratio of  $C_2$  and  $C_1$  perfluorooxy alkylene units  $m/n$  is not at least 2 (see Scarati, col. 3, line 55 – col. 5, line 35).

The Office Action takes the position that class (A4) of Scarati suggests the present PFPEs, and thus the use thereof as lubricants or to provide water and oil repellance. However, it is respectfully noted that the PFPEs of (A4) of Scarati also have a ratio between  $C_2$  and  $C_1$  perfluorooxy alkylene units  $m/n$  that is lower than 2, *i.e.*, the ratio is outside the presently-claimed range, and it does not contain any linear  $C_3$

and C<sub>4</sub> perfluorooxy alkylene units.

Applicants therefore respectfully submit that Flynn and Scarati, whether taken alone or in combination, fail to disclose or suggest all of the features of pending claims 13 and 14. As set forth above, Flynn and Scarati both disclose PFPEs having a ratio between C<sub>2</sub> and C<sub>1</sub> of perfluorooxy alkylene units outside the range presently claimed, *i.e.*, lower than 2. Furthermore, Flynn and Scarati do not contain C<sub>3</sub> and C<sub>4</sub> perfluorooxy alkylene units.

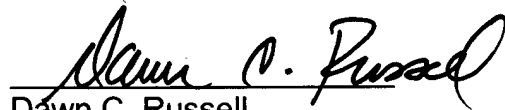
For at least the reasons explained above, Applicants respectfully submit that the Office Action has failed to establish anticipation or a *prima facie* case of obviousness with respect to claims 13 and 14. Applicants submit that claims 13 and 14 are allowable over the cited art, and respectfully request withdrawal of the outstanding rejections.

### **CONCLUSION**

In view of the foregoing amendments and remarks, reconsideration of the application, withdrawal of the outstanding rejections, allowance of Claims and the prompt issuance of a Notice of Allowability are respectfully solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event this paper is not considered to be timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300, making reference to Attorney Docket No. 108910-00125.

Respectfully submitted,

  
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